

S102T01/S102T02
S202T01/S202T02

Low Height Type Solid State Relays

■ Features

1. Low height type (height : 16 mm)
30% less compared with S101S05V
2. Effective ON-state current I_T : MAX. 2Ams ($T_a = \leq 40^\circ\text{C}$)
3. Model Line-ups

	No zero cross circuit	Built-in zero cross circuit
AC100V	S102T01	S102T02
AC200V	S202T01	S202T02

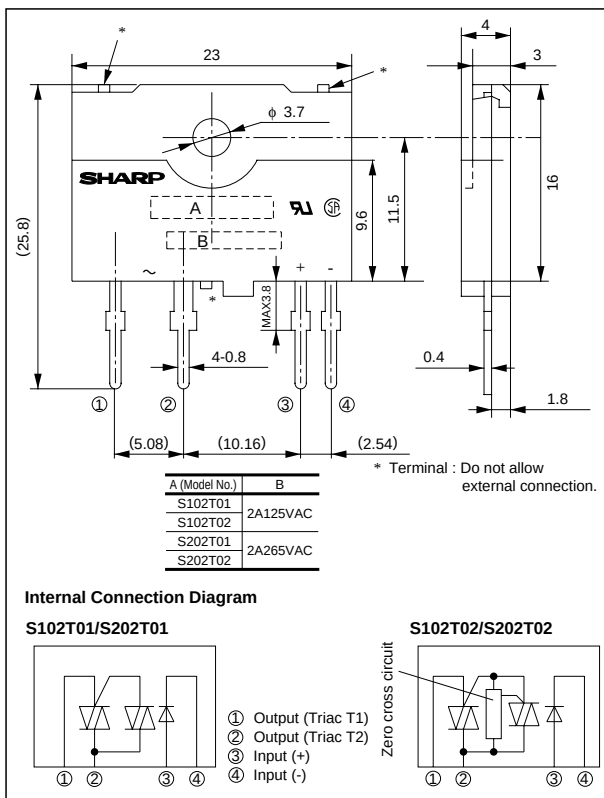
4. Recognized by UL, file No. E94758
Approved by CSA, No. LR63705

■ Applications

1. Programmable controllers
2. Air conditioners
3. Copiers
4. Automatic vending machines

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum ratings

(Ta=25°C)

Parameter		Symbol	Rating		Unit
			S102T01 / S102T02	S202T01 / S202T02	
Input	Forward current	I _F	50		mA
	Reverse voltage	V _R	6		V
Output	*1 Effective ON-state current	I _T	2		A _{rms}
	*2 Peak one cycle surge current	I _{surge}	20		A
	Repetitive peak OFF-state voltage	V _{DRM}	400	600	V
	Non-repetitive peak OFF-state voltage	V _{DSM}	400	600	V
	Critical rate of rise of ON-state current	di _T / dt	40		A/ μs
	Operating frequency	f	45 to 65		Hz
	Operating temperature	T _{opr}	- 25 to + 100		°C
Storage temperature		T _{stg}	- 30 to + 125		°C
*3 Isolation voltage		V _{iso}	3 000		V _{rms}
Soldering temperature		T _{sol}	260 (For 10 seconds)		°C

*1 Refer to Fig. 1. *2 60Hz sine wave, start at Tj=25°C

*3 Isolation voltage test method

- 1) Use a dielectric withstand voltage tester with zero cross circuit.

- 2) The applied voltage waveform shall be sine wave.

- 2) The applied voltage waveform shall be sine wave.
- 3) Apply voltage between input and output. (Input and output terminals shall be shorted respectively.)

"In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that occur in equipment using any of SHARP's devices, shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest version of the device specification sheets before using any SHARP's device."

Electro-optical Characteristics

(Ta=25°C)

Parameter		Symbol	Conditions	MIN.	TYPE.	MAX.	Unit
Input	Forward voltage	V_F	$I_F = 20\text{mA}$	-	1.2	1.4	V
	Reverse current	I_R	$V_R = 3\text{V}$	-	-	1×10^{-4}	A
Output	Repetitive peak OFF-state current	I_{DRM}	$V_D = V_{DRM}$	-	-	1×10^{-4}	A
	ON-state voltage	V_T	$I_T = 2A_{rms}$ Load resistance, $I_F = 20\text{mA}$	-	-	1.7	V_{rms}
	Holding current	I_H	-	-	-	25	mA
	Critical rate of rise of OFF-state voltage	dV/dt	$V_D = 2/3V_{DRM}$	30	-	-	$V/\mu s$
	Critical rate of rise of OFF-state voltage at commutation	$(dV/dt)_C$	$T_j = 125^\circ\text{C}$, $V_D = 400\text{V}$ $dI_t/dt = -1.0\text{A/ms}$	4	-	-	$V/\mu s$
	Minimum trigger current	I_{FT}	*4	-	-	8	mA
Transfer characteristics	Zero cross voltage	S102T02/ S202T02 V_{OX}	$I_F = 8\text{mA}$	-	-	35	V
	Insulation resistance	R_{ISO}	DC500V, 40 to 60% RH	1×10^{10}	-	-	Ω
	Turn-on time	S102T01/ S202T01 S102T02/ S202T02 t_{on}	AC50Hz	-	-	1	ms
				-	-	10	
	Turn-off time	t_{off}	AC50Hz	-	-	10	ms

*4 S102T01/S202T01 $V_D=12\text{V}, R_L=30\Omega$
S102T02/S202T02 $V_D=6\text{V}, R_L=30\Omega$

Fig. 1 Effective On-state current vs. Ambient Temperature

